General

Guideline Title

Glioblastoma.

Bibliographic Source(s)

Alberta Provincial CNS Tumour Team. Glioblastoma. Edmonton (Alberta): CancerControl Alberta; 2012 Sep. 15 p. (Clinical practice guideline; no. CNS-001). [66 references]

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Alberta Provincial CNS Tumour Team. Glioblastoma. Edmonton (Alberta): Alberta Health Services, Cancer Care; 2010 Feb. 14 p. (Clinical practice guideline; no. CNS-001).

Recommendations

Major Recommendations

The Alberta Provincial Central Nervous System (CNS) Tumour Team uses the classification system of the World Health Organization (WHO) to describe CNS tumours, which is based on histologic features of the tumour. Table 1 in the original guideline document outlines the grades and histologic characteristics.

1. Surgery is the initial recommended approach for both debulking and obtaining of tissue for diagnosis. Whenever possible, safe, maximal resection is preferred in the management of glioblastoma (GBM). A larger resection after initial biopsy is left to the discretion of the surgeon depending on the location of tumour and other factors.
2. Adjuvant chemo-radiation therapy is considered the standard of care following surgery for patients with newly diagnosed GBM. Whenever possible, surgery should be followed by radiotherapy and concurrent temozolomide chemotherapy, followed by 6 cycles of adjuvant temozolomide. For patients who show improvement on therapy, additional cycles of temozolomide may be considered.
3. External beam radiation therapy should be given in standard fractionation to a maximum total dose of 60 Gy using 3-dimensional (3D) conformal planning techniques. The volume treated should be partial brain irradiation and not whole brain irradiation. There is no strong evidence to recommend a total dose greater than 60 Gy in standard fractionation, and alternative fractionation schedules have not proven to be more beneficial.
4. Determination of O^6-methylguanine – DNA methyltransferase (MGMT) promoter methylation status may assist in determination of prognosis.
5. The course of radiotherapy may be abbreviated to 40 Gy in 15 fractions in elderly patients (≥60 years old). For elderly patients with a poor performance status, consideration may be given to adjuvant radiation therapy alone.

6. Concurrent and/or adjuvant treatment with temozolomide may be considered in patients older than 60 years of age with a good performance status (Karnofsky performance status [KPS] ≥70).

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Glioblastoma

Guideline Category

Management

Treatment

Clinical Specialty

Geriatrics

Neurological Surgery

Neurology

Oncology

Radiation Oncology

Intended Users

Advanced Practice Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To develop an updated, evidence-based guideline for the management of patients with glioblastoma

Target Population

Adults over the age of 18 years with glioblastoma

Note: Different principles may apply to pediatric patients.

Interventions and Practices Considered

1. Surgery

2. Chemotherapy (temozolomide)
3. External beam radiation (partial brain irradiation)
4. Determination of O^6-methylguanine–DNA methyltransferase (MGMT) gene promoter methylation status

Major Outcomes Considered

- Survival time
- Quality of life

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Research Questions

Specific research questions to be addressed by the guideline document were formulated by the guideline lead(s) and Knowledge Management (KM) Specialist using the PICO question format (Patient or Population, Intervention, Comparisons, Outcomes).

Guideline Questions

- Is resection better than biopsy for patients with glioblastoma?
- Is adjuvant chemotherapy beneficial for patients with glioblastoma?
- Is adjuvant chemotherapy of benefit to elderly patients with glioblastoma?
- What is the optimal radiation therapy plan for patients with glioblastoma?
- Is adjuvant radiation of benefit to elderly patients with glioblastoma?

Search Strategy

Medical journals were searched using the Medline (1950 to December Week 4, 2012), EMBASE (1980 to December Week 4, 212) Cochrane Database of Systematic Reviews (4th Quarter, 2012), and PubMed databases. The search terms included: Glioblastoma [MeSH heading], Glioma [MeSH heading], Brain Neoplasms [MeSH heading], Astrocytoma [MeSH heading], high-grade gliomas, anaplastic gliomas, practice guidelines, systematic reviews, meta-analyses, randomized controlled trials, and clinical trials. The references and bibliographies of articles identified through these searches were scanned for additional sources. Articles were excluded from the review if they: had a non-English abstract, were not available through the library system, were case studies involving less than 10 patients, involved pediatric patients, involved anaplastic astrocytomas or anaplastic oligodendrogliomas as the only high-grade gliomas, or were published prior to the year 2000. All retrieved articles were graded using the criteria outlined by Lau et al.

A search for new or updated clinical practice guidelines published from January 2000 to July 2012 was also conducted, and yielded 9 published guidelines by the following organizations: Cancer Care Ontario (CCO), the British Columbia Cancer Agency (BCCA), Cancer Care Nova Scotia (CCNS), the National Comprehensive Cancer Network (NCCN), the National Cancer Institute (NCI), the National Institute for Health and Clinical Excellence (NICE), the Australian Cancer Network, the European Society for Medical Oncology (ESMO), and the Canadian GBM Recommendations Committee.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Not stated

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Evidence was selected and reviewed by a working group comprised of members from the Alberta Provincial CNS Tumour Team and a Knowledge Management (KM) Specialist from the Guideline Utilization Resource Unit (GURU). A detailed description of the methodology followed during the guideline development process can be found in the Guideline Utilization Resource Unit Handbook (see the "Availability of Companion Documents" field).

Evidence Tables

Evidence tables containing the first author, year of publication, patient group/stage of disease, methodology, and main outcomes of interest are assembled using the studies identified in the literature search. Existing guidelines on the topic are assessed by the KM Specialist using portions of the Appraisal of Guidelines Research and Evaluation (AGREE) II instrument (http://www.agreetrust.org) and those meeting the minimum requirements are included in the evidence document. Due to limited resources, GURU does not regularly employ the use of multiple reviewers to rank the level of evidence; rather, the methodology portion of the evidence table contains the pertinent information required for the reader to judge for himself the quality of the studies.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Formulating Recommendations

The working group members formulated the guideline recommendations based on the evidence synthesized by the Knowledge Management (KM) Specialist during the planning process, blended with expert clinical interpretation of the evidence. As detailed in the Guideline Utilization Resource Unit Handbook (see the "Availability of Companion Documents" field), the working group members may decide to adopt the recommendations of another institution without any revisions, adapt the recommendations of another institution or institutions to better reflect local practices, or develop their own set of recommendations by adapting some, but not all, recommendations from different guidelines.

The degree to which a recommendation is based on expert opinion of the working group and/or the Provincial Tumour Team members is explicitly stated in the guideline recommendations. Similar to the American Society of Clinical Oncology (ASCO) methodology for formulating guideline recommendations, the Guideline Utilization Resource Unit (GURU) does not use formal rating schemes for describing the strength of the recommendations, but rather describes, in conventional and explicit language, the type and quality of the research and existing guidelines that were taken into consideration when formulating the recommendations.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

A formal cost analysis was not performed and published analyses were not reviewed.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

This guideline was reviewed and endorsed by the Alberta Provincial CNS Tumour Team.

When the draft guideline document has been completed, revised, and reviewed by the Knowledge Management (KM) Specialist and the working group members, it is sent to all members of the Provincial Tumour Team for review and comment. This step ensures that those intended to use the guideline have the opportunity to review the document and identify potential difficulties for implementation before the guideline is finalized. Depending on the size of the document, and the number of people it is sent to for review, a deadline of one to two weeks will usually be given to submit any feedback. Ideally, this review will occur prior to the annual Provincial Tumour Team meeting, and a discussion of the proposed edits will take place at the meeting. The working group members will then make final revisions to the document based on the received feedback, as appropriate. Once the guideline is finalized, it will be officially endorsed by the Provincial Tumour Team Lead and the Executive Director of Provincial Tumour Programs.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate management for patients with glioblastoma to improve outcomes and decrease the adverse effects of treatment

Potential Harms

Toxicity of treatment, including hematologic toxicity

Qualifying Statements

Qualifying Statements

The recommendations contained in this guideline are a consensus of the Alberta Provincial CNS Tumour Team and are a synthesis of currently accepted approaches to management, derived from a review of relevant scientific literature. Clinicians applying these guidelines should, in

consultation with the patient, use independent medical judgment in the context of individual clinical circumstances to direct care.

Implementation of the Guideline

Description of Implementation Strategy

- Present the guideline at the local and provincial tumour team meetings and weekly rounds.
- Post the guideline on the Alberta Health Services website.
- Send an electronic notification of the new guideline to all members of CancerControl Alberta.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

End of Life Care

Getting Better

Living with Illness

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2010 Feb (revised 2012 Sep)

Guideline Developer(s)

CancerControl Alberta - State/Local Government Agency [Non-U.S.]

Source(s) of Funding

CancerControl Alberta

There was no direct industry involvement in the development or dissemination of this guideline.

Guideline Committee

Alberta Provincial CNS Tumour Team

Composition of Group That Authored the Guideline

Members of the Alberta Provincial CNS Tumour Team include medical oncologists, radiation oncologists, neurosurgeons, neurologists, nurses, neuropathologists, and pharmacists.

Financial Disclosures/Conflicts of Interest

Participation of members of the Alberta Provincial CNS Tumour Team in the development of this guideline has been voluntary and the authors have not been remunerated for their contributions. CancerControl Alberta recognizes that although industry support of research, education and other areas is necessary in order to advance patient care, such support may lead to potential conflicts of interest. Some members of the Alberta Provincial CNS Tumour Team are involved in research funded by industry or have other such potential conflicts of interest. However the developers of this guideline are satisfied it was developed in an unbiased manner.

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Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the Alberta Health Services Web site.

Availability of Companion Documents

The following is available:

- Guideline utilization resource unit handbook. Edmonton (Alberta): CancerControl Alberta; 2013 Jan. 5 p. Electronic copies: Available in Portable Document Format (PDF) from the Alberta Health Services Web site.

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on February 10, 2012. The information was verified by the guideline developer on March 30, 2012. This summary was updated by ECRI Institute on April 28, 2014. The updated information was verified by the guideline developer on May 22, 2014.

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